




EXPRESS MAIL Number EL811589094US

Deposited June 4, 2001

I hereby certify that this paper or fee is being deposited with the United States Postal Service as "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, DC 20231


Shahan Islam

3197/BDR

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

-----X
In re Application of :
:
Dr. Benedikt AHLERS, et al. :
:
Serial No.: Unassigned : Examiner: Unassigned
:
Filed: June 4, 2001 : Group Art Unit: Unassigned
:
For: SENSOR FOR AUTHENTICITY :
IDENTIFICATION OF SIGNETS :
ON DOCUMENTS :
-----X

Commissioner of Patents and Trademarks
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Prior to Office Action on the merits please amend the above-identified application as follows:

Please amend Claims 3-5, 7-19, 20, 21, 23 and 24 as follows:

IN "CLEAN" FORM

3.(Amended) An authenticity feature for detection using a sensor as claimed in claim 1, wherein, in order to identify the signet on a document, the signet is equipped, at least in subregions, with a pigment which can be detected using the up-conversion effect.

4. (Amended) An authenticity feature for detection using a sensor as claimed in claim 1, wherein the signet can be detected as a fluorescent authenticity feature, using the down-conversion effect.

5. (Amended) An authenticity feature for detection using a sensor as claimed in claim 1, wherein the signet is excited, as a fluorescent authenticity feature, at a specific wavelength, and responds at the same wavelength.

7. (Amended) The authenticity feature for detection using a sensor as claimed in claim 6, wherein the pigments are added directly to an applied solution, to an applied paint, to the adhesive or to the paper.

8. (Amended) The sensor as claimed in claim 7, wherein position-resolved detection is carried out in the transport direction.

9. (Amended) The sensor as claimed in claim 8, wherein the sensor is in the form of a two-band sensor, in which the test object is illuminated once and in which two different spectral bands are evaluated.

10. (Amended) The sensor as claimed in claim 9, wherein the sensor is in the form of a UV luminescence sensor, in which the test object is illuminated with UV light (for example using a UV LED at a wavelength of 370 nm), and wherein the luminescence signal is detected in a different spectral band.

11. (Amended) The sensor as claimed in claim 10, wherein an additional object detector (optical barrier) is used, which indicates to the sensor when the object (signet) starts and when it ends.

12. (Amended) The sensor as claimed in claim 11, wherein pigments having a fast rise time and a fast decay time (for example typically 0.1 m/s) are used.

13. (Amended) The sensor as claimed in claim 12, wherein a laser wavelength of 980 ± 10 nm is used for excitation.

14. (Amended) The sensor as claimed in claim 12, wherein a laser wavelength of 850 ± 10 nm is used for excitation.

15. (Amended) The sensor as claimed in claim 14, wherein the laser line produced using cylindrical lenses has an illumination intensity whose maximum occurs at the center of the line.

16. (Amended) The sensor as claimed claim 15, wherein the laser line is produced using an aspherical cylindrical lens.

17. (Amended) The sensor as claimed in claim 15, wherein the laser line is produced using a sinusoidal lens surface.

18. (Amended) The sensor as claimed in claim 15, wherein, in order to compensate for the sensitivity variation of the receiver, the illumination intensity of the laser line is increased slightly at the edge of the laser line.

19. (Amended) The sensor as claimed claim 18, wherein a reflection cone is arranged in front of the electronic evaluation unit for beam intensification which is in the form of a funnel-shaped or cylindrical hollow body having a metallically coated surface on the inside, or is in the form of a transparent funnel-shaped or cylindrical solid body.

20. (Amended) The sensor as claimed in claim 19, wherein a photo multiplier having a detection surface roughly in the form of a point and whose surface corresponds approximately to the outlet surface of the reflection cone is arranged immediately behind the reflection cone.

21. (Amended) The sensor as claimed claim 20, wherein only a portion of the scanning line is in each case imaged on the receiver via a respective lens, with these different imaged parts of the scanning line overlapping one another.

22. (Amended) The sensor as claimed in claim 21, wherein the lenses are arranged as a stack, resting closely against one another, at the window of the housing.

23. (Amended) The sensor as claimed in claim 21, wherein the light from each lens is passed through a respective reflection cone and falls on a respective receiver [(18)].

24. (Amended) The sensor as claimed in claim 23, wherein the transmitting and receiving beams are joined together via a dichroic beam splitter, and leave the sensor housing together.

REMARKS

The purpose of the amendment herein is simply to remove the multiple dependencies and does not constitute any waiver of subject matter relinquished in view of the prior art or otherwise.

Applicant reverse its rights to bring back any of the multiple dependencies(or equivalently dependencies).

Additional amendments have been made to remove the parenthetical references to element numbers.

Respectfully Submitted,



Shahan Islam
Reg. No. 32,507

Dated: June 4, 2001
Rosenman & Colin LLP
575 Madison Avenue
New York, NY 10022
Tel. (212) 940-8564

VERSION WITH MARKINGS TO SHO CHANGES MADE

3.(Amended) An authenticity feature for detection using a sensor as claimed in claim 1[or 2], **wherein**, in order to identify the signet on a document, the signet is equipped, at least in subregions, with a pigment which can be detected using the up-conversion effect.

4. An authenticity feature for detection using a sensor as claimed in claim 1 [or 2], **wherein** the signet can be detected as a fluorescent authenticity feature, using the down-conversion effect.

5. An authenticity feature for detection using a sensor as claimed in claim 1 [or 2], **wherein** the signet is excited, as a fluorescent authenticity feature, at a specific wavelength, and responds at the same wavelength.

6. The reality feature for detection using a sensor as claimed in claim 5, **wherein** the emission wavelength of the authenticity feature is at the same wavelength as the excitation wave, and wherein the pulse response follows the excitation pulse with a time delay.

7. The authenticity feature for detection using a sensor as claimed in [one of claims 1 to] claim 6, **wherein** the pigments are added directly to an applied solution, to an applied paint, to the adhesive or to the paper.

8. The sensor as claimed in [one of claims 1 to] claim 7, **wherein** position-resolved detection is carried out in the transport direction.

9. The sensor as claimed in [one of claims 1 to] claim 8, **wherein** the sensor is in the form of a two-band sensor, in which the test object is illuminated once and in which two different spectral bands are evaluated.

10. The sensor as claimed in [one of claims 1 to] claim 9, **wherein** the sensor is in the form of a UV luminescence sensor, in which the test object is illuminated with UV light (for example using a UV LED at a wavelength of 370 nm), and wherein the luminescence signal is detected in a different spectral band.

11. The sensor as claimed in [one of claims 1 to] claim 10, **wherein** an additional object detector (optical barrier) is used, which indicates to the sensor when the object (signet) starts and when it ends.

12. The sensor as claimed in [one of claims 1 to] claim 11, **wherein** pigments having a fast rise time and a fast decay time (for example typically 0.1 m/s) are used.

13. The sensor as claimed in [one of claims 1 to] claim 12, **wherein** a laser wavelength of 980 ± 10 nm is used for excitation.

14. The sensor as claimed in [one of claims 1 to] claim 12, **wherein** a laser wavelength of 850 ± 10 nm is used for excitation.

15. The sensor as claimed in [one of claims 1 to] claim 14, **wherein** the laser line produced using cylindrical lenses has an illumination intensity whose maximum occurs at the center of the line.

16. The sensor as claimed in [one of claims 1 to] claim 15, **wherein** the laser line is produced using an aspherical cylindrical lens.

17. The sensor as claimed in [one of claims 1 to] claim 15, **wherein** the laser line is produced using a sinusoidal lens surface.

18. The sensor as claimed in [one of claims 1 to] claim 15, **wherein**, in order to compensate for the sensitivity variation of the receiver, the illumination intensity of the laser line is increased slightly at the edge of the laser line.

19. The sensor as claimed in [one of claims 1 to] claim 18, **wherein** a reflection cone [(31)] is arranged in front of the electronic evaluation unit for beam intensification which is in the form of a funnel-shaped or cylindrical hollow body having a metallically coated surface on the inside, or is in the form of a transparent funnel-shaped or cylindrical solid body.

20. The sensor as claimed in claim 19, **wherein** a photo multiplier having a detection surface roughly in the form of a point and whose surface corresponds approximately to the outlet surface [(32)] of the reflection cone is arranged immediately behind the reflection cone [(31)].

21. The sensor as claimed in [one of claims 1 to] claim 20, **wherein** only a portion of the scanning line [(9)] is in each case imaged on the receiver [(18)] via a respective lens [(20, 20'')] (Figure 5)], with these different imaged parts of the scanning line overlapping one another.

22. The sensor as claimed in claim 21, **wherein** the lenses [(20, 20'')] are arranged as a stack, resting closely against one another, at the window [(8, 8')] of the housing [(1)].

23. The sensor as claimed in claim 21 [or 22], **wherein** the light from each lens [(20, 20'')] is passed through a respective reflection cone [(31)] and falls on a respective receiver [(18)].

24. The sensor as claimed in [one of claims 1 to] claim 23, wherein the transmitting and receiving beams are joined together via a dichroic beam splitter, and leave the sensor housing together.